

REMARKS

In the present Amendment, independent claim 1 is amended to incorporate the subject matter of claims 2 and 3, which depend from claim 1. Accordingly, claims 2 and 3 are cancelled.

Claims 1 and 4 were amended for purposes of clarity by replacing the recitation “one type, or two or more types” with the recitation “at least one of.” This amendment is only directed to form.

Claim 6 is amended to replace the recitation “particulate silver compound particles” with the recitation “silver particles.”

Claim 7, which depends from claim 1, is rewritten in independent form by incorporating the subject matter of original claim 1.

Claims 10 and 11 are amended to depend from claim 1.

New claim 23 is added. Claim 23 is independent and recites an electrically conductive coating formed on a plastic base material, wherein silver particles are mutually fused, and the volume resistivity is about 3.0×10^{-6} to about $8.0 \times 10^{-6} \Omega \cdot \text{cm}$. Support for the claim is found, for example, in the paragraph bridging pages 12-13 of the present specification.

No new matter is added, and entry of the Amendment is respectfully requested. After entry of the Amendment, claims 1 and 4-23 are pending.

A. The Present Claims are Patentable over Bergö-Heineman

In Paragraph No. 3 of the Action, claims 1-2, 4-6, 16-18 and 21 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 2,560,151 to Bergö-Heineman.

Without conceding the merits of the rejection, independent claim 1 is amended to incorporate the subject matter of claims 2 and 3, which depend from claim 1. Claim 3 is not subject to the present rejection.

In view of the above, Applicants respectfully submit that the § 102(b) rejection of claims 1-2, 4-6, 16-18 and 21 based on Bergö-Heineman should be withdrawn.

B. The Present Claims are Patentable over Bergö-Heineman in view of Niihara

In Paragraph No. 4 of the Action, claims 3, 8-10, 13-15 and 22 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bergö-Heineman in view of U.S. Published Patent App. No. 2004/0005406 to Niihara et al.

Applicants respectfully traverse.

Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness, since the Examiner failed to establish some suggestion or motivation, in either the references themselves or in the knowledge generally available to the one of ordinary skill in the art, to combine the reference teachings.

Applicants submit that a person having skill in the art would not have been motivated to combine Bergö-Heineman with Niihara, since Niihara only relates to uniformly coating metal and is silent with respect to electrical conductivity and resistivity.

The present claims recite an electrically conductive composition in which a reduction reaction of silver is used, and silver particles are mutually fused at a low temperature of about 150-200°C. Thus, an electrically conductive coating having excellent volume resistivity, which is the same extent as that of metal silver, is obtained.

In order to obtain the excellent volume resistivity at the above-described low temperature, the silver particles must be mutually fused, and unified metal silver must be formed. Accordingly, the average particle diameter of the particulate silver compound is about 0.01-10 μm . Moreover, the above-described average particle diameter of the particulate silver compound allows - by coating and heating at low temperature - the excellent volume resistivity to be obtained.

In contrast, if the average particle diameter of the particulate silver compound is over 10 μm , it is difficult for the silver particles to be mutually fused, and the excellent volume resistivity of Applicants' electrically conductive coating cannot be obtained.

Moreover, even if the base material is plastic, a coating having low volume resistivity can be formed because the above-described coating can be formed at a low temperature of about 150-200°C.

In contrast, Bergö-Heineman does not disclose or fairly suggest a composition wherein the average particle diameter of a particulate silver compound is about 0.01-10 μm , which is required by present claim 1. The Examiner attempts to cure this deficiency by citing Niihara.

However, as discussed above, Niihara is unrelated art. Niihara relates to a process for uniformly coating metal and discloses a process where metal coating is performed by dispersing

powders of an inorganic compound in a liquid containing an organic solvent such that silver oxide powder is included in ethanol. Niihara does not relate to coatings of low volume resistivity.

Thus, Niihara is silent with respect to the electrical conductivity and resistivity of its metal-coating material. Accordingly, a person having skill in the art would not have been motivated to combine the method of coating electrical contact pins of Bergö-Heineman with the teachings of Niihara to arrive at the electrically conductive composition and coating according to the present claims.

In view of the above, Applicants respectfully request that reconsideration and withdrawal of the § 103(a) rejection of claims 3, 8-10, 13-15 and 22 based on Bergö-Heineman in view of Niihara.

C. The Present Claims are Patentable over Bergö-Heineman in view of Negm

In Paragraph No. 5 of the Action, claim 7 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bergö-Heineman in view of U.S. Patent No. 5,399,547 to Negm et al.

Applicants respectfully traverse.

Bergö-Heineman and Negm, alone or in combination, fail to disclose or render obvious the electrically conductive coating according to present claim 7.

The Examiner concedes that Bergö-Heineman does not disclose or suggest an electrically conductive coating wherein “the volume resistivity is about 3.0×10^{-7} to about $8.0 \times 10^{-6} \Omega\text{-cm}$.” The Examiner attempts to cure this deficiency by citing Negm.

Applicants submit that Negm fails to cure Bergö-Heineman’s deficiency.

Negm discloses a method for increasing the critical current density of high transition temperature semiconductors. In column 3, lines 57-68, Negm simply discloses that a particle diffusing method of preparing electrical contacts for superconductors provides a contact of “markedly reduced electrical resistance.” Accordingly, Negm fails to disclose or suggest the volume resistivity recited by present claim 7 and fails to cure Bergö-Heineman’s deficiency.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejection of claim 7 based on Bergö-Heineman in view of Negm.

D. The Present Claims are Patentable over Bergö-Heineman in view of Dickenson

In Paragraph No. 6 of the Action, claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bergö-Heineman in view of U.S. Patent No. 2,592,870 to Dickenson et al.

Claims 11 and 12 depended from claim 1 and are patentable over Bergö-Heineman in view of Dickenson at least by virtue of their dependency and additional elements recited therein.

In view of the above, Applicants respectfully submit that the § 103(a) rejection of claims 11 and 12 based on Bergö-Heineman in view of Dickenson should be withdrawn.

E. The Present Claims are Patentable over Bergö-Heineman in view of Robillard

In Paragraph No. 7 of the Action, claims 19 and 20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bergö-Heineman in view of U.S. Patent No. 4,206,017 to Robillard.

Claims 19 and 20 depend from claim 1 and are patentable over Bergö-Heineman in view of Robillard at least by virtue of their dependency and additional elements recited therein.

In view of the above, Applicants respectfully submit that the § 103(a) rejection of claims 19 and 20 based on Bergö-Heineman in view of Robillard should be withdrawn.

H. Claim 23 is Patentable over the Cited References

Applicants kindly direct the Examiner's attention to claim 23, which recites an electrically conductive coating formed on a plastic base material, wherein silver particles are mutually fused, and the volume resistivity is about 3.0×10^{-6} to about $8.0 \times 10^{-6} \Omega \cdot \text{cm}$.

As noted above, the cited references fail to disclose or suggest the volume resistivity recited by present claim 23. Moreover, as noted above, the silver particles are able to be mutually fused at a low temperature of about 150-200°C, which allows the electrically conductive coating having excellent volume resistivity to be formed on a plastic base material.

Accordingly, Applicants submit that claim 23 is patentable over the cited references.

G. Conclusion

Allowance of claims 1 and 4-23 is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

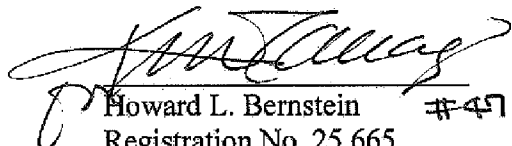
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